



A Homeowners Guide to



Non-Point Source Water Pollution in Hampton, New Hampshire

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NON-POINT SOURCE WATER POLLUTION IN HAMPTON, NEW HAMPSHIRE

People in Hampton are increasingly aware that their lifestyle has an impact on the health of our ponds, streams, rivers, the marsh and the ocean, as well as the water they use every day.

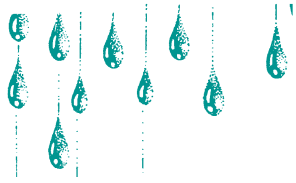
Rain and snow falling on homes, lawns and drive-ways all over Hampton eventually find their way into our precious water resources, carrying our pollutants with them. How we treat water and household pollutants affects every Hampton resident, as well as anybody who uses the waters in the Cape of Maine, right off our coast.

The drain and the dump! This is how some people typically get rid of things they no longer want. The trouble is that these receptacles are not designed to handle all of our modern wastes. When we depend solely upon them, we expose ourselves, our children, our neighbors, our property, and even our pets to dangerous risks.

What is non-point source pollution?

Think of our watershed as a funnel. Everything that goes in to the top of it comes out the bottom. Sediment, nutrients, toxics, septic tank effluent, and other pollutants wash from agricultural fields, pavement, bare slopes, and your home landscape into streams, lakes, rivers and groundwater. These are sources of "non-point" (from more than one source) pollution. The discharges of wastewater treatment plants and other kinds of water pollution that enters the water at a specific place are called "point" sources.

On the following pages are suggestions for things you can do to protect your property and the whole of Hampton from non-point source water pollution.



MANAGING THE PATH OF WATER

Slow it down.

Runoff from stormwater washes loose soil, fertilizers, pesticides, and other pollutants into ponds and streams. When you channel water into vegetated areas and away from storm drains or streams, you slow the pace of the water so it will more likely seep into the ground where it can be naturally filtered. This also helps protect against siltation and destructive stream bank erosion.

- Watch where water goes on your land during a heavy rainstorm and again during spring snowmelt.
- Direct downspouts toward flat, well-vegetated areas or into gravel-filled seepage pits, and not toward impervious paved areas.
- Keep paved areas to a minimum. Use bricks or blocks set in sand, stepping stones, gravel, wood chips, or other porous material where a hard surface is desired.
- Install gravel trenches along driveways and patios to control the flow of water.

Soak it up.

Make your yard a sponge. Trees, shrubs, grass, and ground covers help water soak into the soil, control erosion, remove pollutants, shade and cool the air, and dry out damp areas. They also make your home a more pleasant place to live, and enhance its value.

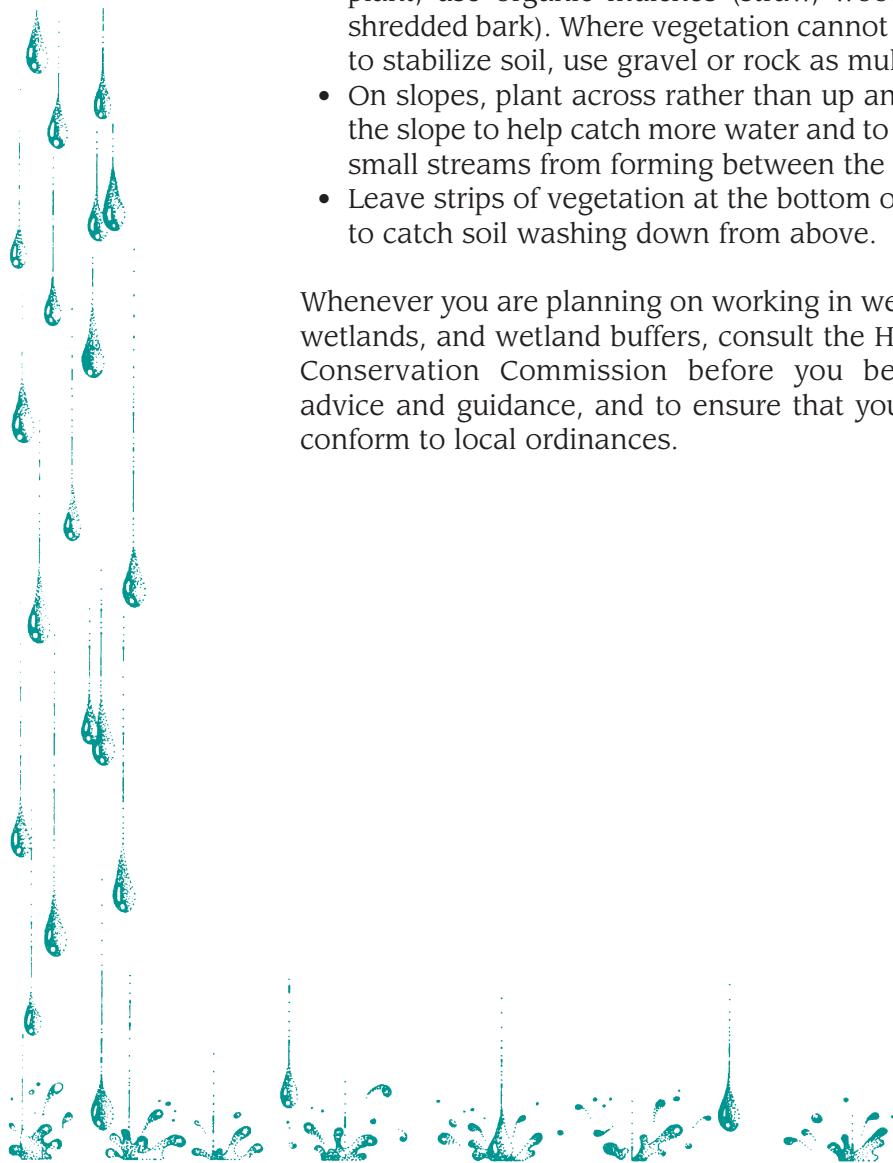
- Protect existing trees and other plantings.
- Consider naturalized landscaping, using native plants which establish easily and need less watering and care than exotic plants.
- Give slopes special protection against erosion with stabilizing vegetation, mulch, turf, or even a rock garden.
- Keep soil from compacting by tilling, aerating, or planting. Compacted soil will not allow water to soak in.

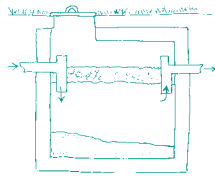
Separate your yard from any water resources or predominantly wet areas: Prevent soil erosion.

Keep your soil where it is. It will clog streams and fish gills if allowed to migrate into nearby water.

- Avoid the clearing of land whenever possible.
- Retain native vegetation to keep soil in place until you are ready to replant.
- Cover bare soil with mulch. Where you hope to plant, use organic mulches (straw, wood chips, shredded bark). Where vegetation cannot be used to stabilize soil, use gravel or rock as mulch.
- On slopes, plant across rather than up and down the slope to help catch more water and to prevent small streams from forming between the plants.
- Leave strips of vegetation at the bottom of slopes to catch soil washing down from above.

Whenever you are planning on working in wet areas, wetlands, and wetland buffers, consult the Hampton Conservation Commission before you begin for advice and guidance, and to ensure that your plans conform to local ordinances.





YOUR SEPTIC SYSTEM

This is your waste, and you've got to deal with it.

Everything that goes down the drain, into the toilet, or into the dishwasher and clothes washing machine ultimately goes into the soil, or stays in the septic tank until it is pumped out. Deal with it properly, while understanding and caring for your septic system, and you can prolong the life of your system and protect water quality. Neglect or abuse it, and you may need expensive repairs and/or allow harmful bacteria and nutrients to enter the soil and water.

Do you have a proper septic system?

If your home is not connected to a public sewer system, your sewage remains on site. If your home was built before 1967, it is possible that your "septic system" is little more than a homemade hole in the ground. This presents a very real threat, both to your property value and to the health of your family, pets and neighbors, to say nothing of the water quality.

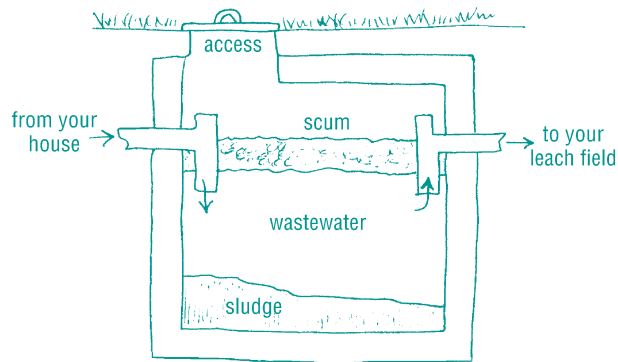
A proper, well-maintained system will adequately treat your sewage. A failed system is unhealthy, illegal, expensive to replace, and a nuisance to your neighborhood and your watershed. It may contaminate your property and nearby wells, and jeopardize surface and ground waters all the way from your home to the Gulf of Maine. Contamination of ponds, streams, and rivers by inadequate or failing septic systems may destroy beneficial plant life and ruins habitat for fish and other wildlife.

How a septic system works.

Since you are solely responsible for maintaining it, you should know how your septic system works. Wastewater enters the tank from your house, and the heavy solids sink to the bottom. Grease, oils, and lighter solids rise to the top, where they form a layer of scum. Bacteria, which are naturally present in materials flushed into the system, decompose the biodegradable waste. The liquids flow out of the tank through a pipe to the leach field, where bacteria, viruses, and some phosphorus are removed. Eventually, the filtered wastewater reaches the water table.

In the tank.

Solids and grease remain in the tank until they are pumped out. If they are allowed to build up enough to enter the pipe leading to the leach field, expensive problems often occurs.

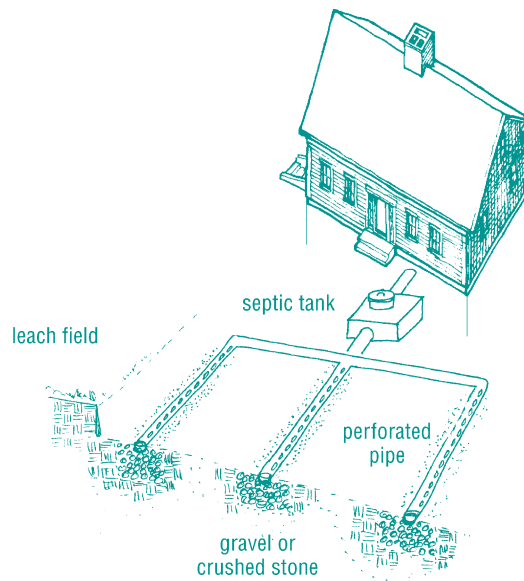


Keep it running right.

- Know the location of your tank, clean-out man-hole and leach field. Make a sketch and post it in the basement where the sewer pipe leaves the house.
- Have the tank inspected every 2-3 years to check the level of accumulated sludge. It will have to be pumped out periodically to prevent damage to the leach field. Keep a record of pumping, inspection, and other maintenance, so you know when to make the next call to a licensed pumper. Give the record to the new owner if you sell your home.
- Check for warning signs of system failure: Sewage odor; slowly running household drains and toilets; and soggy soil or especially lush, green grass over the leach field. These indicate that nutrients from your sewage could be on their way into the local groundwater.
- Spread your laundry chores through the week to avoid overloading the system. Take big loads of laundry to the laundromat, especially when your soil is already saturated by heavy rains.
- Use only professional, licensed septic contractors.
- Obtain proper permits before making repairs to your septic system. Check with the town clerk or building department to see what local and state permits must be approved before you begin.
- Conserve water.

Protect your septic system area.

- Keep vehicles and livestock away from the entire system - they can compact soil, crush pipes, and crack the tank, resulting in costly repairs and water pollution.
- Keep trees or shrubs at least 10 ft. from the leach field, to prevent clogging by roots.
- Stack firewood and place storage sheds and other structures such as patios, driveways, and swimming pools away from the tank and leach field.



Feed your septic system only what it is designed to treat.

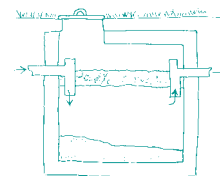
- Never pour household chemicals down the drain or toilet - they poison "good" bacteria in the septic tank.
- Limit the use of drain and toilet bowl cleaners and disinfectants for the same reason.
- Don't pour fats, oils, and other grease down the drain. They will plug your system.
- Never flush cigarette butts, disposable diapers, sanitary napkins, tampons, or tampon applicators down the toilet. They decompose slowly, if ever.
- Use only white toilet paper, since colored paper does not break down as rapidly in the tank, and the dyes are toxic to septic tank bacteria.
- Use a drain strainer to catch hairs or food that might clog the drain

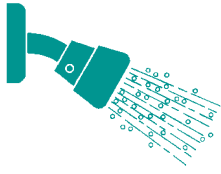
- Avoid garbage disposals in the kitchen sink. They not only use a great deal of water, but add solids and grease that may overburden the system and clog a septic pump. Instead, make a compost of your kitchen scraps.
- Don't connect a basement sump pump to the household drain and septic system.
- Make sure roof gutters and downspouts don't drain onto the leach field.
- Use no/low phosphate detergents to clean dishes and clothes. Your septic system cannot remove phosphate, which will pass through the soil into surface waters and fertilize aquatic algae and other pest plants. Most liquid detergents are phosphate-free, as are some powders. Check the label before you buy.

Avoid septic cleaners and additives.

Chemicals and enzymes are often armful to your tank and to groundwater. They should not be used even though they are heavily promoted as helpful to septic systems. There are over 1,200 brands of septic system cleaners or additives available on the market. They contain hazardous chemicals that may interfere with the bacteria in your tank, and allow oil and grease to pass through the system to clog up the leach field. The chemicals are resistant to biodegradation, and threaten wells and water quality in the local watershed.

Bacterial additives are a waste of your money: Your septic tank already has a sufficient population of bacteria to do the job.





USING LESS WATER

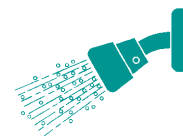
Add extra life to your septic system and well pump, and reduce water pollution by reducing runoff.

In your yard

- Use drip irrigation directly at plant roots rather than overhead sprinkling to cut irrigation water needs by 30-70%.
- If you use overhead sprinklers, place them carefully to keep water focused where needed, and not on pavement or other non-porous surfaces.
- Water at night or early in the morning when water lost to evaporation will be minimized.
- Avoid frequent shallow watering, which encourages shallower roots and a thirstier lawn. Allow 1" of water at each irrigation (set out an empty tuna can to help you measure).
- Keep your lawn mowed at 2-4" high to help conserve moisture.
- Mulch gardens and landscaping to retain water and discourage weeds.
- Turn some of your lawn into a meadow of native wildflowers, which require less water.
- Use drought-tolerant turf grasses and other plants that require less water - ask your garden center for suggestions.
- Wash your car in your yard, and only as necessary. Use a high-pressure, low-volume hose with a pistol-grip nozzle. Better yet, save even more water by using a bucket and a sponge.

In your house

- Turn off the water while brushing your teeth, washing your face, or shaving.
- Take shorter showers and shallower baths. A bath can use 30-50 gallons of water.
- Do not leave the water running while you wash vegetables or dishes in the sink.
- Wait until you have a full load before running the dishwasher or clothes washer, and use the shortest cycle and the lowest water level possible. Permanent-press cycles may use an extra 10-20 gallons of water.
- Install flow-reducers in sink faucets and showerheads.
- Install low-flow toilets or water displacement fixtures, such as two half-gallon plastic bottles filled with water, in your toilet tank. This can reduce water use by 20-50%.
- Test your toilet tank for leaks by adding food coloring; if color appears in the bowl within 30 minutes without flushing, you have a leak that could waste as much as 200 gallons of water each day.
- Repair leaking or worn fixtures and faucets promptly.
- Keep a bottle of drinking water in the fridge instead of running tap water until it gets cold.





YARD WASTE

Keep your yard clean.

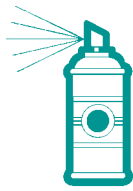
- Never pile leaves or other yard waste near a stream bank.
- Remove grass clippings and leaves from paved areas. They may wash into storm sewers where they can decay and become unwelcome fertilizers in lakes and streams.
- Compost or till leaves into the garden.
- Leave grass clippings on the lawn as fertilizer, or use them as mulch.

Pet waste

Pet waste may be a dangerous cause of human and other diseases, as well as a potential fertilizer for algae in waterways. People or animals drinking water contaminated by pet waste could ingest harmful pathogens.

- Do not put pet waste into storm drains.
- Do not add pet waste to the compost pile, since even the hottest compost piles do not reach temperatures necessary to kill disease-carrying micro-organisms.
- If you live near a pond, stream, wetlands or wetlands buffer, bury pet waste at least 100 feet from these areas.
- If you live in a more urban area, pick up waste to keep it from washing into waterways or storm drains. Flush it down the toilet or bury it outside, 4-6" deep and away from vegetable gardens and areas where children are likely to play or dig.





CHEMICALS: HANDLE WITH CARE

Expose yourself and your home to chemical fertilizers, pesticides, and other pollution and safety hazards only if there is no acceptable alternative. Whenever you buy a product, you take on a responsibility to use and dispose of it properly. Create one area for mixing, loading, and storage, away from your well. Dispose of any leftovers properly.

Fertilize your home landscape, not the watershed.

- Test to know what your soil actually needs before you apply extra nutrients.
- Buy only as much lawn and garden fertilizers as you need.
- Select slow-release or organic fertilizers like grass clippings, manure and compost, which release nutrients more slowly and evenly than chemical fertilizers, and improve soil texture.
- Read and follow package directions.
- Apply at half the strength twice as often to minimize the danger of fertilizers washing off.
- Fertilize at the right time of year for your plants - usually as spring growth begins.
- Never apply fertilizer to frozen ground.
- Avoid fertilizing on windy days.
- Water lightly after fertilizing, but...
- Don't apply fertilizers or pesticides just before a heavy rain.
- Avoid spreading fertilizers on paved areas.
- Store unused fertilizer in a dry place in a plastic bag, or share it with someone who will use it up.
- Keep your lawn healthy with proper mowing, fertilizing, liming, and watering. If you use a lawn care service, be sure they test your soil and know the location of your well or other sensitive areas of your property.
- Contact your county Cooperative Extension Service for lawn-care recommendations.



BUGS

A heavy-hitting chemical pesticide may not be the most effective way of coping, after all.

Try a non-toxic approach first.

A healthy lawn and garden are better able to resist pests and withstand drought, reducing the need for pesticides and overwatering. Integrated Pest Management (IPM) involves carefully identifying your particular pest problem, and choosing the best method or combination of ways to deal with it.

- Get rid of old tires or other trash that could harbor breeding pools of pests, such as mosquitoes.
- Plant borders of marigolds, chives, onions, garlic, or basil to repel insects from your vegetable garden.
- Construct insect barriers, such as screens or foil collars, around plants.
- Use pest-resistant flowers, vegetables, and other plants whenever possible.
- Plant mixed stands of trees or crops, instead of planting just one type.
- Time plantings to avoid peak of insect infestations.
- Handle minor pest problems by hand-weeding and destroying insects, or dislodging them with a spray of water.
- Use natural predators, such as ladybugs, praying mantids, lacewings, garter snakes, and toads to eat garden pests. Eggs and larvae of these predators are available from better garden suppliers. Encourage these natural predators by protecting their habitats.
- Rotate crops so that the same pests do not have a chance to settle in.

Seek less toxic pest control products.

If non-toxic methods aren't enough, diagnose the problem first. Then use insecticidal soaps, BT (*Bacillus thuringiensis*) or milky spore (two kinds of natural bacteria), or dormant oil sprays as appropriate. These are usually available at garden centers.

Pesticides: A last resort.

Use pesticides only when other methods have failed.

- Find out what pests you have, and choose the least toxic product available (EPA labels say "caution," rather than "warning" or "danger").
- Buy only the amount you need, and apply the smallest amount needed to do the job.
- Follow the label exactly, and avoid the temptation to use more than the label directs. Overdosing will not do a better job - it will only cost you more, and risk poisoning you and/or contaminating your water.
- Apply pest control at the right time and place in the pest's life cycle, as the label specifies.
- Apply only on calm, dry days when no rain is forecast for at least 24 hours. This will help prevent the pesticide from blowing or washing away before it has a chance to work.
- Avoid spraying pesticide over sidewalks, gutters, or other paved areas where it can wash into waterways, or to bare ground or eroded soil.
- Never apply near wells, waterways, or other open water resources.





HOUSEHOLD HAZARDOUS WASTE

You wouldn't think of standing by the river and pouring this stuff in!

Modern technology has brought many new chemicals into the home. Many of these products are familiar ones we use every day. Some may contain ingredients that are poisonous if eaten, breathed, or absorbed through the skin; that corrode other materials; react to create fumes; explode; or are extremely flammable.

Poisonous materials thrown away in the trash may end up in the air after incineration, or in a landfill that is unequipped to handle them, and from where they may eventually seep into groundwater. Chemicals flushed or poured down a drain may corrode your plumbing, collect and release fumes you later inhale, ruin your septic system, or leach into your well.

It takes only a small amount of chemical, handled improperly, to contaminate a well, disrupt the function of a septic system, or poison a child. One gallon of motor oil can contaminate one million gallons of drinking water - a year's supply for fifty people!

Some commonly-used household toxic products.

- In the kitchen: Oven cleaners, furniture polish, floor wax, drain cleaners, spot remover, metal polish, mothballs, adhesives, batteries, bug killer, cleaning fluid, mouse bait, lamp oil, and window cleaner.
- In the bathroom: Toilet bowl cleaner, nail polish remover, medicine, and insect repellent.
- In the garage: Motor oil, battery acid, gasoline, car brake fluid, lubricants, bug and tar remover, radiator flush, windshield wiper solution, swimming pool chemicals, kerosene, charcoal lighter fluid and self-lighting charcoal, grill polish and cleaner, butane lighter fluid, lye, and asphalt driveway sealer.
- In the workshop: Oil-based paint, varnish, preservative, paint thinner, paint stripper, paint brush cleaner, and solvents.

- In the garden: Herbicide, pesticide, fungicide, pest strips, and fertilizers.
- Hobby supplies, including photographic chemicals, chemistry sets, glues, and adhesives.

Avoid collecting toxic materials.

- Read the label: Know what you are buying and what the dangers are.
- Choose the least hazardous product. use non-toxic or “old fashioned” safe homemade alternatives, where possible.
- Buy only what you need, and use it up instead of storing the leftovers.
- Avoid aerosol-spray products that contain ozone-damaging chlorofluorocarbons (few products contain these anymore).

Handle household toxics safely in your home.

- Read and follow the package directions which are provided for your safety.
- Heed label warnings, such as “do not incinerate.”
- Never mix toxic products.
- Use only the recommended amount.
- Store in the original container so you can refer to the label each time you use the product to ensure that you use it properly and safely.
- Store toxics in a safe place, securely closed, until a safe disposal option exists.

Safe disposal of household hazardous waste.

- Do not burn it, bury it, or put it in the trash.
- Do not use the toilet as a hazardous waste dump.
- Never pour hazardous wastes down the sink, on the ground, or into a storm drain or waterway.
- Pass unused toxics to someone who will use them up, or take them to a household hazardous waste collection program. Call Hampton D.P.W. (603-926-4402) for disposal specifics.
- Paint cans should be allowed to dry completely before placing in the trash.
- Save unwanted household chemicals, such as cleaning fluid, in their original containers for disposal at a household hazardous waste collection.
- Recycle used turpentine, brush cleaner, and paint thinner yourself by letting particles settle out. Then pour off the chemical and reuse it.
- Remove non-lead-based paint with sandpaper or heat gun instead of a chemical stripper.
- Use less toxic, vegetable oil-based engine cleaners.

- Dispose of used motor oil by taking it to the recycling center, or call NH DES Waste Management Division for alternative collection centers.
- Use less toxic, propylene glycol-based antifreeze rather than ethylene glycol-based antifreeze. Take used antifreeze to a household hazardous waste collection site.

Alternatives to toxic household products.

- Air freshener: Sprinkle baking soda on rugs and then vacuum; set vinegar out in an open dish.
- All-purpose cleaner: Mix 1 gallon hot water and 1/4 cup vinegar. This solution is safe for all surfaces and can be rinsed away with water.
- Bathroom cleaner: Use baking soda to scrub surfaces clean, and wipe with a solution of 1/4 cup vinegar in 1 gallon of water.
- Drain cleaner: Use a plunger or metal “snake” to keep drains open. For clogged drains, pour in 1/4 cup baking soda, then 1/2 cup vinegar. Close the drain until all the fizzing stops, then flush well with boiling water.
- Furniture polish: Mix 2 parts vegetable oil with 1 part lemon juice.
- Lighter fluid: Use matches.
- Metal cleaner (for brass, copper, pewter): Dissolve 1/4 cup salt in a little vinegar, and add flour to make a paste.
- Moth-proofing: Store cleaned clothes in garment bags spread with cedar chips.
- Oven cleaner: Dampen spill and sprinkle salt on it while the oven is still warm. Scrape away mixture when cooled. Greasy spots can be removed with a vinegar-soaked rag. For tough spots, dampen with water and scrub with baking soda and steel wool.
- Low abrasion scouring powder: Baking soda.
- Silver polish: Soak silver in 1 quart of warm water with 1 teaspoon each of baking soda and salt, and a piece of aluminum foil.
- Stain remover: Apply cold seltzer or club soda immediately, let soak, then gently rub out.
- Window cleaner: Fill empty spray bottle with 3 teaspoons ammonia, 1 teaspoon vinegar, and cool water.
- Use latex paints rather than oil-based products.



GET YOUR COMMUNITY INVOLVED

- Ask your Board of Selectmen what is being done locally about household hazardous waste.
- Organize a paint swap with our neighbors.
- Suggest to your local garden club, church, scout group or service organization that they sponsor a meeting on improving local water quality. Ask the Hampton Conservation Commission to help structure and facilitate such a meeting.
- Get involved with the Conservation Commission, Zoning Board, and/or Planning Board to help with issues related to our water resources.

What you do every day makes a difference for Hampton, its aquifer, and its watershed. And whatever you do to benefit our water resources will, in the long run, benefit you, your family, and the Town of Hampton.



WHERE TO GO FOR HELP

Soil erosion control -

Natural Resources Conservation
Service
Telly's Plaza, 243 Calef Hwy
Epping, NH 03042-2326
603-679-1587
603-679-4658 fax
<http://soils.usda.gov/>

Household hazardous waste -

Dept. of Environmental Services
Waste Management Div
6 Hazen Dr
Concord, NH 03301
603-271-3503

Septic systems, water pollution -

Dept. of Environmental Services
Water Supply & Pollution Control Div
Subsurfaces Systems Bureau
6 Hazen Dr
Concord, NH 03301
603-271-3503

Pest management, fertilizers, water conservation, lawn and landscape maintenance -

UN Cooperative Extension Service
113 North Road
Brentwood, NH 03833-6623
603-679-5616
603-679-8070 fax
<http://extension.UN.edu/Counties/Rockingham/Rockingham.htm>